The CHICAGO SUBWAYS

OCTOBER
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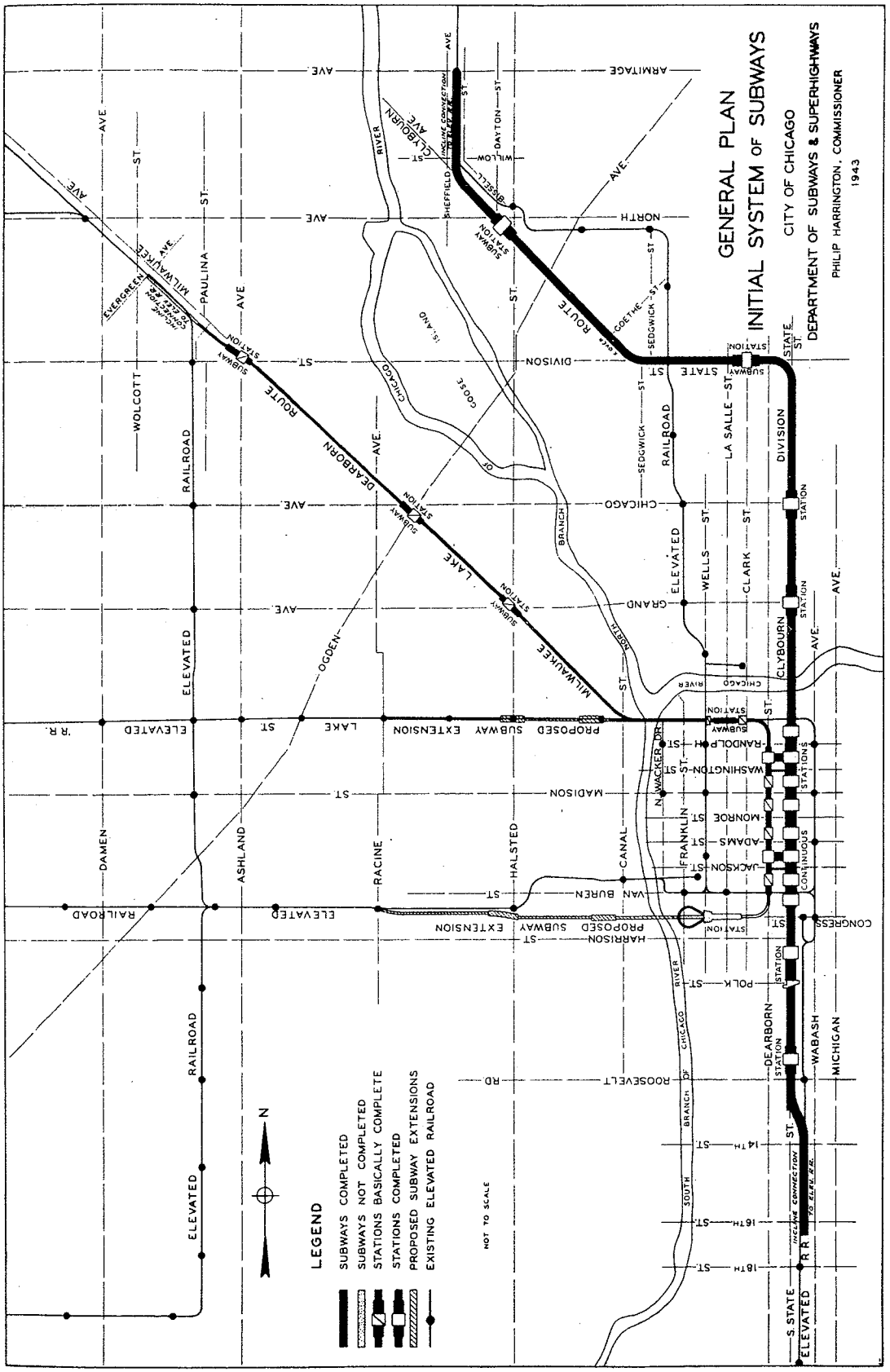
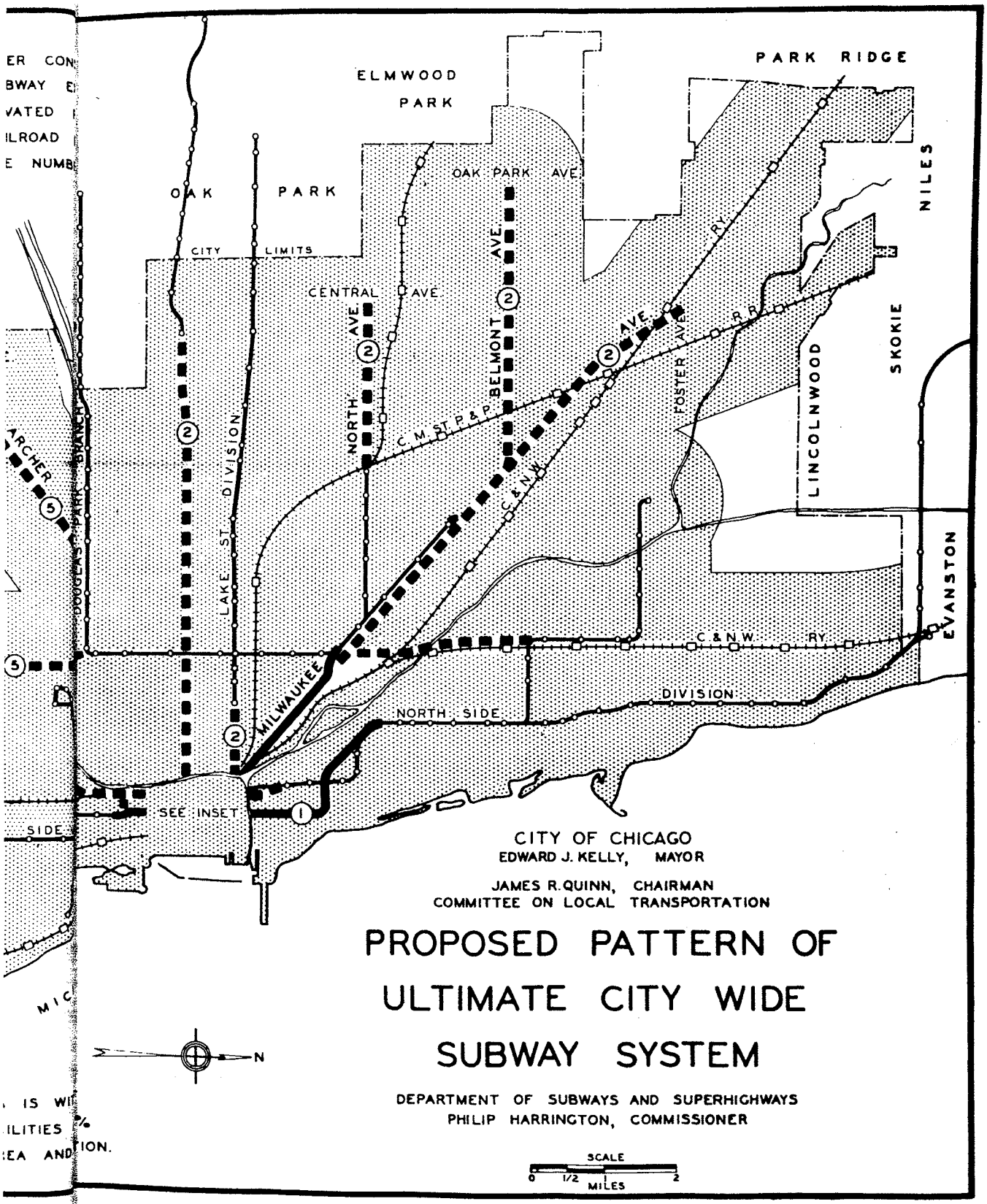

GENERAL PLAN
INITIAL SYSTEM OF SUBWAYS
CITY OF CHICAGO
DEPARTMENT OF SUBWAYS & SUPERHIGHWAYS
PHILIP HARRINGTON, COMMISSIONER
1943
LEGEND
SUBWAYS COMPLETED
SUBWAYS NOT COMPLETED
STATIONS BASICALLY COMPLETE
STATIONS COMPLETED
PROPOSED SUBWAY EXTENSIONS
EXISTING ELEVATED RAILROAD
NOT TO SCALE
N
MILWAUKEE ROUTE
LAKE ROUTE
DEARBORN ROUTE
OGDEN
PROPOSED SUBWAY EXTENSION
ELEVATED
RAILROAD
DIVISION
STATE
CLYBOURN
WELLS
CLARK
LA SALLE
SEDGWICK
CHICAGO
GRAND
NORTH
ARMITAGE
DAYTON
WILLOW
SHEFFIELD
DIVERSEY
EVERGREEN
WOLCOTT
PAULINA
DAMEN
ASHLAND
RACINE
HALSTED
CANAL
FRANKLIN
N. WACKER DR.
RANDOLPH
WASHINGTON
MONROE
ADAMS
JACKSON
VAN BUREN
HARRISON
POLK
ROOSEVELT
CONGRESS
DEARBORN STATION
WABASH
MICHIGAN
S. STATE
CHICAGO RIVER
SOUTH BRANCH OF CHICAGO
NORTH BRANCH OF CHICAGO
GOOSE ISLAND
INCLINE CONNECTION TO ELEV. R.R.

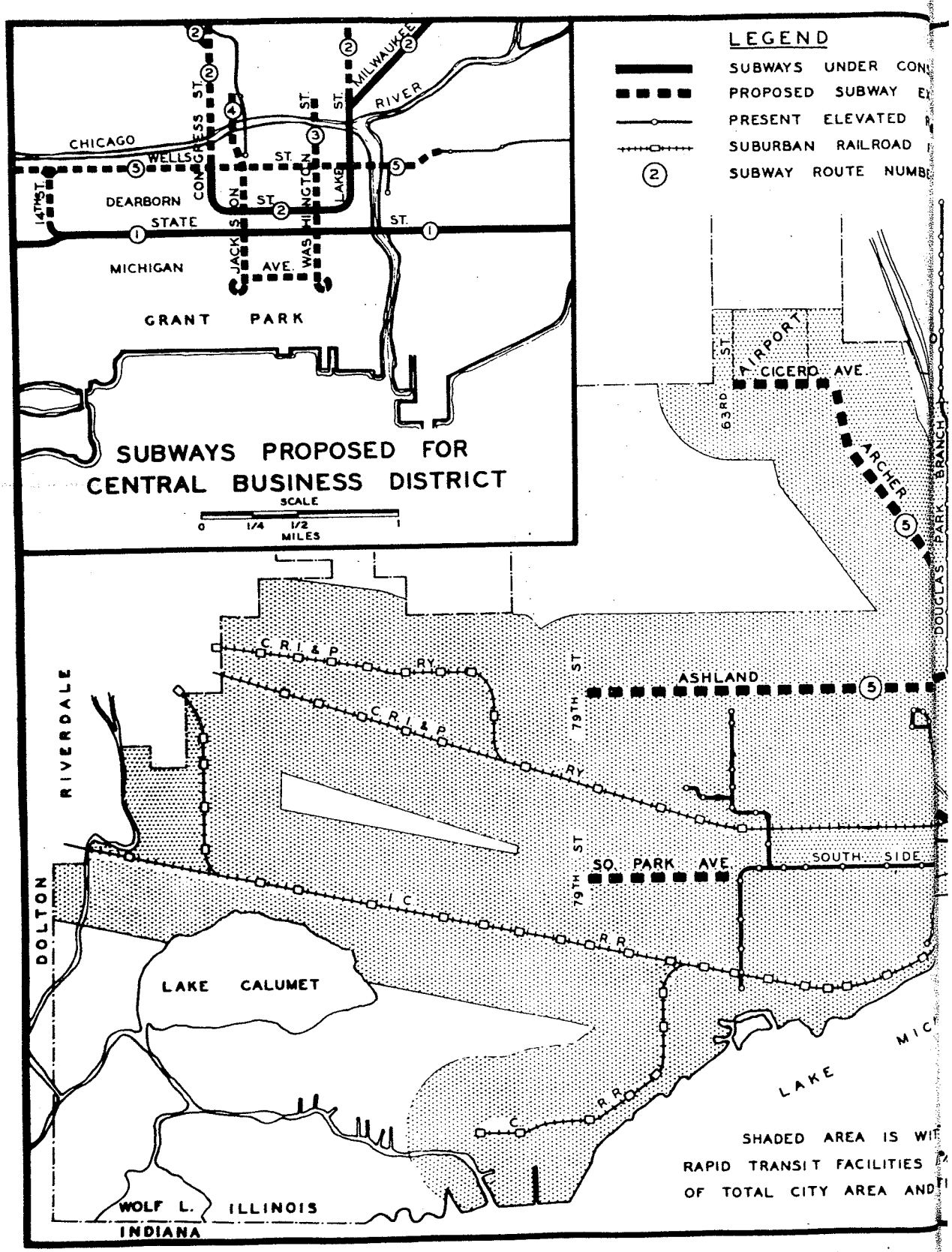


CITY OF CHICAGO
EDWARD J. KELLY, MAYOR

JAMES R. QUINN, CHAIRMAN
COMMITTEE ON LOCAL TRANSPORTATION

PROPOSED PATTERN OF ULTIMATE CITY WIDE SUBWAY SYSTEM

DEPARTMENT OF SUBWAYS AND SUPERHIGHWAYS
PHILIP HARRINGTON, COMMISSIONER


LEGEND
SUBWAYS UNDER CON
PROPOSED SUBWAY E
PRESENT ELEVATED
SUBURBAN RAILROAD
SUBWAY ROUTE NUMB
CHICAGO
WELLS ST.
CONGRESS ST.
MILWAUKEE
RIVER
ST. N
LAKE
DEARBORN
STATE
ST.
14TH ST.
MICHIGAN
AVE.
GRANT PARK
SUBWAYS PROPOSED FOR
CENTRAL BUSINESS DISTRICT
SCALE
0 1/4 1/2 1
MILES
AIRPORT
CICERO AVE.
63RD ST.
ARCHER
DOUGLAS PARK BRANCH
ASHLAND
79TH ST
SO. PARK AVE.
SOUTH SIDE
C R I & P RY
RIVERDALE
DOLTON
I C R R
LAKE CALUMET
LAKE MICH
C R R
WOLF L.
ILLINOIS
INDIANA
SHADED AREA IS WIT
RAPID TRANSIT FACILITIES
OF TOTAL CITY AREA AND

MORE SUBWAY FACTS AND FIGURES

LENGTH

The two-track Clybourn-Division-State Street Subway is 4.9 miles long. It is Route No. 1 of Chicago's Initial System of Subways. Construction was authorized by the Council November 3, 1938, and in six weeks—a record for speed on a project of such size—work was begun.

ROUTE

From a connection with the North Side Elevated Lines near Armitage and Sheffield Avenues, Route No. 1 extends southeast in Clybourn Avenue, east in Division Street and south in State Street to a connection with the South Side Elevated Lines near Sixteenth Street.

TIME SAVING

Subway users save from seven to twenty-two minutes per day as against the time required to travel to the same destination on the "L". Seventy million passengers are predicted for Route No. 1 in its first year of operation.

TRAIN OPERATION

Route No. 1 is capable of accommodating 50 percent or more of the Howard Street-Jackson Park trains and the Ravenswood-Englewood trains. This means a rush hour schedule of 40 trains an hour per track, or a total of 80 per hour. All trains that travel through the subway are marked "Via Subway."

STATIONS

There are sixteen stations in Route No. 1, each train stop being identified by its own particular color scheme. Beginning at the North Ave.-Clybourn-Halsted station, the primary colors of blue, red, green and brown are rotated among the stops as follows:

North Ave.-Clybourn-Halsted	Blue	Madison-Monroe	Red
Clark and Division	Red	Monroe-Adams	Red
Chicago Avenue	Green	Adams-Jackson	Green
Grand Avenue	Brown	Jackson-Van Buren	Green
Ohio Street (Auxiliary)	Brown	Van Buren-Congress	Green
Lake-Randolph	Blue	Harrison and State	Brown
Randolph-Washington	Blue	Polk and State	Brown
Washington-Madison	Blue	Roosevelt Road	Blue

In general there are four sidewalk entrances, two on each side of the street above the tubes at each station. These entrances are set back from street intersections to eliminate interference with cross traffic.

SUBWAY CARS

Until funds become available through unification of the local transit companies, Route No. 1 must operate with the 456 old steel cars now owned by the Chicago Rapid Transit Company. These cars have been adapted for subway service, being equipped with automatic train control and other devices. New cars must be purchased to equip Route No. 2 (See Page 30) when it is completed.

TRAIN PLATFORMS

One of the longest subway train platforms in the world is the continuous center platform that stretches 3,500 feet across the loop from below Van Buren Street to near Lake Street. This platform is twenty-two feet wide. Center platforms at outlying stations are 18 feet wide. Platform edges are marked by white safety strips. There are eight mezzanine stations in the loop, but there are only three train stops—Washington (Lake to Madison), Monroe (Adams to Jackson) and Jackson (Adams to Congress).

TRACK AND POWER FACILITIES

The Subway's exceptionally smooth riding qualities result from special track design. Half ties are imbedded in concrete, and the heavy steel rails (100 pounds to the yard) with welded joints rest on rubber insets in the tie plates. There is no grade that exceeds 3 per cent, and the few curves can be run at close to top speed. There are only four curves in the subway compared to the eleven sharp curves and several reverse curves on the comparable portion of the elevated route.

COST

Including tracks, the world's first fluorescent lighting system for subway operation, the unequaled ventilating system, the latest type signal system, and the accident-proofed reversible escalators, Route No. 1 cost approximately $34,000,000. Of this amount $3,850,000 is reimbursible to the City in the future.

FINANCING

The total cost of the two subways is estimated at $57,400,000 of which the Federal Government is contributing $23,130,000. This is without fixed operating equipment. The City's share of this cost is being paid from the City's Traction Fund. No additional taxes, and no special assessments have been levied to give Chicago its first subway.

RIGHT-OF-WAY

An important contributing factor to quick start of construction following council authorization was the dispatch with which right-of-way for the route was acquired. All of the purchases—even those negotiated by real estate experts representing the City and the Federal Government—went through condemnation proceedings. Virtually all of these cases—sixteen of them altogether—were promptly called and heard by Circuit Judge Dennis J. Normoyle, who remained on the bench during vacation periods to dispose of these cases expeditiously. There were 351 parcels of property, embracing not only right-of-way for Route No. 1 but right-of-way for Route No. 2 (See below) as well. The City acquired these properties for a total of $2,325,000 at a saving of $475,000 below the estimated cost

METHODS OF MINING

The tubes of Route No. 1 were mined in tunnel at depths ranging from 44 to 48 feet below the street surface. In the areas outside the loop, where the clay subsoil is comparatively free from water, the tubes were mined by the "bench" method. (See Page 10). In the downtown area, where the water content of soil is as high as 58 per cent, and street and building loads are heavy, the shield method was used because of its greater safety in such fluid soil. (See Page 10.) Exhaustive soil test preceded every step in actual excavation and construction.

TYPES OF CONSTRUCTION

The tubes are reinforced concrete structures. Twin tube sections have an overall width of 39 feet generally, except at stations and on curves. The inside overall width of twin tube sections is 34 feet. The single tubes are 15 feet wide inside and are 8½ feet apart. The mezzanine stations were constructed in open cuts. These excavations were covered with heavy decking that carried all street traffic, even trucks and street cars, during the construction period.

QUANTITIES OF MATERIALS

Construction of Routes No. 1 and No. 2 (80 per cent complete) has required 135,000 tons of steel, 1,000,000 barrels of cement, 1,000,000 cubic yards of stone and sand, 230 miles of conduit, and large quantities of other materials. More than 2,000,000 cubic yards of clay have been excavated.

TESTING AND INSPECTION

All materials that went into the construction of the subway were subjected to the most rigid tests at the source of supply, in the field, in our own laboratory, or in commercial laboratories. For example, field forces not only conducted geological examinations of each sand or gravel pit, rejecting areas where the aggregates were unsuitable, but followed closely the mixing of the concrete itself. Each run of concrete that went into the subway was proportioned, tested and inspected. Cores of concrete were later taken from the structure and laboratory tested.

Many tons of material, including reinforcement, structural and track steel, structural glass, terra cotta and cable, and all of the equipment, were tested and inspected. Whatever failed to meet Department specifications and Government (PWA) requirements was permanently rejected. By these tests and inspections, and constant engineering supervision, the high quality of the finished job was assured.

PRIORITIES

At the beginning of the critical material shortage resulting from the national defense program, the Initial System of Subways was granted a B-1 priority rating. This soon proved inadequate. Early in 1942, completion of the Clybourn-Division-State Street route of the subway was classed as a defense project because of Chicago's serious need of more transit facilities to serve the rapidly increasing number of workers in defense plants. The project was up-rated and subsequently ratings were assigned to obtain vital materials. Even so, some equipment was not delivered until almost two years after the orders were placed. These circumstances inevitably slowed the progress of construction.

SUBSTITUTIONS

Long before Pearl Harbor, the Department voluntarily revised its original plans and specifications to provide for the use of substitutes wherever possible. A considerable quantity of stainless and chromium steel, bronze, copper and aluminum was eliminated. These metals were, and still are critical materials. For example, instead of encasing structural columns with stainless steel as planned, either paint or marble was used for finish. Rust-proofed steel was substituted for bronze in hardware and lighting fixtures. Marble replaced aluminum for panels on the escalators. Copper was eliminated wherever it was possible to make substitutions.

ROUTE No. 2

The second of the two routes of the Initial System of Subways is 3.85 miles long. From a connection with the Northwest "L" lines near Milwaukee and Evergreen Avenues, this two-track subway extends southeast in Milwaukee Avenue, east in Lake Street and south in Dearborn Street to Van Buren Street where it is to continue west in Congress Street to a loop near the river. Construction of this route has been halted because of the war. Eighty per cent complete now, it is to be finished as soon as war conditions permit.

FUTURE SUBWAYS

The City's plans call for the construction of almost 50 miles of additional subways as extensions of this Initial System in three stages of construction as early as war conditions and financing problems permit.